Kansas
Department of Health and Environment

Adequacy of Prenatal Care Utilization Index Kansas, 2015

Kansas Department of Health and Environment
Division of Public Health
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Our Vision – Healthy Kansans living in safe and sustainable environments

Our Mission – To protect and improve the health and environment of all Kansans

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Executive Summary

Improving family health is an essential role for public health agencies. Tracking the quantity of prenatal care pregnant women receive through the Adequacy of Prenatal Care Utilization (APNCU) Index enables public health agencies to identify inequities in the provision of care. Using birth certificate information, the Kansas Department of Health and Environment (KDHE) calculates the APNCU using methods developed by Dr. Milton Kotelchuck. In 2015, prenatal care defined as less than adequate (inadequate + intermediate) decreased by 3.5 percent compared to 2014, while adequate or better prenatal care increased by 0.9 percent. Currently, Kansas' level of adequate or better prenatal care (83.7%) is better than the Healthy People 2020 target of 77.6 percent; however, inequities by population group and pay source continue.

Introduction

Maintaining and improving family health is an essential component of the public health mission of KDHE. Facilitating healthy pregnancies and positive birth outcomes pays dividends to Kansas society in the form of reduced maternal and infant mortality and children capable of learning and growing into productive members of society. It is in this role the department, through the Division of Public Health's Bureau of Epidemiology and Public Health Informatics (BEPHI), provides this report in order that progress in the provision of adequate prenatal care can be monitored.

Organized prenatal care began with attempts to prevent fetal abnormalities. Later it was recognized it might also reduce maternal, fetal, and neonatal deaths. Prenatal care is health care one receives when pregnant. It includes maternal checkups and prenatal testing in order to spot health problems early. Early treatment can cure many problems and prevent others. A typical prenatal visit may include any or all of the following elements: weight measurement, blood pressure measurement, measurement of the uterus to check for proper

growth of the fetus, physical examination of the mother to detect problems or discomforts, urine tests to detect diabetes, preeclampsia or edema, fetal heart rate measurement, and various screening tests, such as blood tests to check for anemia. Prenatal care is important because potential problems that endanger the mother or her infant can be identified and treated before delivery or even prevented altogether [1, 2, 3].

Inadequate prenatal care has been associated with pre-term delivery, low birthweight and small-for-gestation infants [4, 5]. It has also been linked with a higher overall net cost per pregnancy for mother and newborn care combined [6].

Adequate prenatal care is one of the national goals in the Healthy People 2020 program: "MICH-10: Increase the proportion of pregnant women who receive early and adequate prenatal care." The target is that 77.6 percent of pregnant women receive early and adequate prenatal care by the year 2020 [7].

The purpose of this report is to inform policy makers, local health departments, program managers and the public of the extent to which adequate prenatal care is provided to pregnant women in Kansas, and to indicate disparities in the provision of that care. The BEPHI has published the adequacy of prenatal care utilization index report since 1998.

Methods

KDHE, through the Office of Vital Statistics, receives reports of births that occur in Kansas. Reporting of Kansas vital events to KDHE is mandated by law (K.S.A. 65-102, K.S.A. 65-2422b, K.S.A. 65-445). The filing of birth and death records began in 1911. Births to Kansas residents that occurred in other states are received via Inter-Jurisdictional Exchange. All statistics reported are based on births to women who were Kansas residents.

KDHE collects birth certificate information consistent with the 2003 U.S. Standard Certificate. Data collected since 2005 is based on the standard certificate as modified for use in Kansas. BEPHI uses an 18 month reporting period when creating an analytical file. Thus, all births that occur in a given year – reported during that year or the first six months of the year following – are included in the analytical file. Data used in this report are for 2015 births. The analytical file is considered 99.9 percent complete.

All birth records undergo a two-step quality improvement process. In the Office of Vital Statistics, paper certificates are manually reviewed by staff for missing or illogical information. The Vital Statistics Data Analysis section performs computerized checks of the data on an ongoing basis and once prior to closing the analytical file. Corrections or imputation occurs to geographic information, sex of the child, and mother's age. See the technical notes in the *2015 Kansas Annual Summary of Vital Statistics* for more information [8].

Statistical tabulations were created using SAS version 9.3 software. Joinpoint regression was used for trend analysis in Figure 5. ArcMap 10.2.1 was used for mapping in Figure 6. Additionally, in accordance with the National Center for Health Statistics practice, the

relative standard error (RSE) was used in this report to evaluate reliability of percentages in Table 7. Values with a RSE of 30 percent or less are considered reliable. Values with a RSE greater than 30 percent but less than 50 percent are considered unreliable, and values with RSE greater than 50 percent have been suppressed [9]. Table 1 of this report was also included in the *Kansas Annual Summary of Vital Statistics, 2015*. The repetition enhances the utility of this report to readers.

Accurate measurement of prenatal care depends upon the accuracy of the index used. Beginning with 1998 data, KDHE transitioned from a modified Kessner Index to the Adequacy of Prenatal Care Utilization (APNCU) Index, often referred to as the Kotelchuck Index [10]. This index characterizes prenatal care (PNC) utilization on two independent and distinctive dimensions: adequacy of initiation of PNC and adequacy of utilization of received services once PNC has begun. The index uses information readily available on the Kansas birth certificate (number of prenatal care visits, date of first prenatal visit, date of last menses, and gestational length of pregnancy). The APNCU index combines these data to characterize adequacy of pregnancy-related health services provided to a woman between conception and delivery. The APNCU Index categorizes care as inadequate, intermediate, adequate, or adequate plus (for more details see the Technical Notes, page 24).

The APNCU Index does not assess the quality of prenatal care that is delivered, only its utilization. Assessing the quality of the services provided would require more information than is provided on the Kansas standard birth certificate.

Results & Discussion

Only selected findings are discussed in this section. Other tables and figures are provided to meet evaluation requirements by county or other characteristics.

APNCU Index was calculated on 38,939 out of 39,126 or 99.5 percent of Kansas resident live births in 2015 (Figure 1). The number of births that contained the variables necessary to calculate the prenatal care utilization index increased by 0.8 percent from 2014 (38,488 out of 38,805 or 99.2 percent of live births).

Of the 38,939 Kansas resident births for which prenatal care utilization could be calculated in 2015, 83.7 percent received adequate or better prenatal care, including 29.3 percent with adequate-plus care. This level of adequate or better prenatal care meets the target established by Healthy People 2020 (77.6%). However, 16.4 percent received less than adequate prenatal care, with 10.4 percent having inadequate care and 5.9 percent intermediate care (Table 1).

In 2015, the number of women reporting inadequate prenatal care (4062) decreased 5.6 percent compared to 2014 (4,304). The percentage of adequate care utilization increased by 5.2 percent (20,137 in 2014 and 21,180 in 2015). Adequate-plus prenatal care utilization (11,949 in 2014 and 11,391) increased by 4 .7 percent (Table 1).

Among mothers whose prenatal care utilization was classified as inadequate, the vast majority (3,821 or 94.1%) were due to late initiation of care. A minority of women (241 or 5.9%) who initiated their care early (within the first four months of pregnancy) received inadequate care due to an insufficient number of prenatal care visits to their providers (Figure 1).

In 2015, among mothers of infants with low birthweight, 82.2 percent received adequate or better care, while 11.1 percent experienced inadequate care (Table 2, Figure 2).

The percentage of adequate or better prenatal care was highest among White non-Hispanic mothers (87.4%), followed by Asian/Pacific Islander non-Hispanic mothers (83.7%), Black non-Hispanic mothers (73.9%), and Other non-Hispanic mothers (76.7%). Hispanic mothers had the lowest percentage (72.5%) receiving adequate or better prenatal care (Table 3).

Among the population groups, 18.0 percent of Hispanic mothers, 17.0 percent of Black non-Hispanic mothers, and 21.2 percent of Native American non-Hispanic mothers experienced inadequate prenatal care. These percentages were more than twice the 7.9 percent of White non-Hispanic mothers who experienced inadequate care (Table 3, Figure 3).

In 2015, private insurance paid the highest percentage to adequate or better prenatal care (91.9%) followed by Tricare (78.5%). The highest percentage of mothers who received inadequate care was paid by Self Pay at (27.0%), followed by Indian Health Service at 23.1 percent (Table 4). The percentage of mothers who self-paid and experienced inadequate care increased 2.7 percent from 2014 (26.3%) to 2015.

However, among the 4,062 mothers who received inadequate prenatal care, 51.0 percent of those were paid by Medicaid, followed by private insurance (23.0%) and Self Pay (16.6%) (Figure 4).

Among mothers having their first live birth, those with adequate or adequate plus prenatal care (85.6%) was 3 percentage points higher than mothers having second or higher live births (82.6%) (Table 5). Similarly, first births with inadequate prenatal care (9.1%) were less than second or higher births with inadequate prenatal care (11.2%).

Inadequate prenatal care was lower across every age group among mothers with first births than among mothers with second or higher live births, except for the 10-14 age group which could not be determined (Table 5).

Inadequate prenatal care was higher among younger mothers (age groups 15-19 and 20-24) than older mothers aged 25 years and above (Table 6).

Overall, the percentage of births where the mother received less than adequate prenatal care in Kansas decreased from 19.8 percent in 1999 to 16.3 percent in 2015. Trends in less than adequate prenatal care were assessed using joinpoint regression analysis from 1999 to

2015. The annual percentage change (APC) in prenatal care that was less than adequate remained statistically unchanged between 1999 and 2007, followed by a significant decline from 2007 until 2011 (APC = -5.7%; 95%CI: -10.1%, -1.2%), and remained statistically unchanged through 2015 (Figure 5).

County percentages of mothers who received less than adequate prenatal care in 2015 were compared to the state percentage and tested for statistically significant differences. The percentage of mothers who received less than adequate prenatal care was significantly higher in 12 counties than the state percentage, and percentages for seven counties were significantly lower than the state percentage. Percentages for 40 counties were not statistically significantly different from the state percentage, while 46 counties could not be measured and compared reliably due to the small number of people who received less than adequate prenatal care (Figure 6).

The percentage changes in adequate and better prenatal care and less than adequate prenatal care are shown by individual Kansas counties from 2014 to 2015 in Table 7. There was a small percentage decrease in less than adequate care for the state of Kansas (3.5%) from 2014 to 2015. There was a very small increase in adequate and better prenatal care (0.9%).

The percentage of birth mothers receiving less than adequate prenatal care increased or remained unchanged in 22 counties from 2014 to 2015. Pratt county had the largest increase in less than adequate prenatal care (61.6% increase) from 2014 to 2015, followed by Marshall (38.1% increase) and Butler (30.7% increase) counties.

The percentage of birth mothers receiving less than adequate care decreased in 32 counties from 2014 to 2015. Sumner (44.4%), Lyon (32.8%) and Dickinson (29.8%) counties had the largest decreases in less than adequate prenatal care. In 34 counties the percent changes in less than adequate prenatal care were not reliable (RSE>30), and in 17 counties the counts were too small to calculate change.

From 2014 to 2015 the percentage of birth mothers receiving adequate and better prenatal care increased or remained unchanged in 58 counties, while 35 counties experienced decreases. Logan County had the largest decrease in adequate and better prenatal care (14.7%) from 2014 to 2015. In 12 counties the percentage of change in adequate and better prenatal care were not reliable measures.

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1. Certificate of Live Birth

Table 1. County of Kansas Resident Live Births by Adequacy of Prenatal Care Utilization (APNCU) Index
Kansas, 2015

County of Residence	Live Births	APNCU Category‡								n.s.
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Kansas	39,126	11,391	29.3	21,180	54.4	2,306	5.9	4,062	10.4	187
Allen	144	50	34.7	59	41.0	12	8.3	23	16.0	0
Anderson	84	32	38.1	36	42.9	4	4.8	12	14.3	0
Atchison	208	50	24.3	117	56.8	16	7.8	23	11.2	2
Barber	59	10	16.9	42	71.2	4	6.8	3	5.1	0
Barton	362	188	51.9	126	34.8	15	4.1	33	9.1	0
Bourbon	211	94	45.2	72	34.6	9	4.3	33	15.9	3
Brown	133	43	32.3	60	45.1	14	10.5	16	12.0	0
Butler	744	159	21.4	499	67.2	28	3.8	57	7.7	1
Chase	24	9	37.5	10	41.7	3	12.5	2	8.3	0
Chautauqua	42	17	41.5	17	41.5	1	2.4	6	14.6	1
Cherokee	252	92	37.1	109	44.0	10	4.0	37	14.9	4
Cheyenne	39	8	20.5	22	56.4	3	7.7	6	15.4	0
Clark	25	7	28.0	12	48.0	2	8.0	4	16.0	0
Clay	89	30	33.7	44	49.4	6	6.7	9	10.1	0
Cloud	127	28	22.0	72	56.7	8	6.3	19	15.0	0
Coffey	76	24	31.6	41	53.9	2	2.6	9	11.8	0
Comanche	21	5	23.8	14	66.7	0	0.0	2	9.5	0
Cowley	445	181	40.7	185	41.6	9	2.0	70	15.7	0
Crawford	477	148	31.2	204	42.9	52	10.9	71	14.9	2
Decatur	34	7	20.6	22	64.7	3	8.8	2	5.9	0
Dickinson	236	77	32.6	132	55.9	10	4.2	17	7.2	0
Doniphan	97	36	37.1	44	45.4	9	9.3	8	8.2	0
Douglas	1,327	547	41.3	634	47.9	34	2.6	109	8.2	3
Edwards	29	8	27.6	16	55.2	1	3.4	4	13.8	0
Elk	21	9	42.9	7	33.3	1	4.8	4	19.0	0
Ellis	364	68	18.7	248	68.1	25	6.9	23	6.3	0
Ellsworth	65	20	30.8	36	55.4	3	4.6	6	9.2	0
Finney	725	191	26.5	325	45.0	51	7.1	155	21.5	3
Ford	649	151	23.3	244	37.7	76	11.7	176	27.2	2
Franklin	320	94	29.6	181	56.9	9	2.8	34	10.7	2
Geary	1,118	247	22.3	574	51.8	126	11.4	161	14.5	10
Gove	37	9	24.3	19	51.4	6	16.2	3	8.1	0
Graham	21	2	9.5	16	76.2	2	9.5	1	4.8	0
Grant	121	33	27.5	51	42.5	11	9.2	25	20.8	1
Gray	81	18	22.2	42	51.9	8	9.9	13	16.0	0
Greeley	16	2	12.5	9	56.3	1	6.3	4	25.0	0
Greenwood	69	25	36.2	29	42.0	2	2.9	13	18.8	0
Hamilton	34	9	26.5	19	55.9	2	5.9	4	11.8	0
Harper	80	13	16.3	59	73.8	3	3.8	5	6.3	0
Harvey	411	208	51.2	161	39.7	10	2.5	27	6.7	5
Haskell	56	20	35.7	25	44.6	2	3.6	9	16.1	0
Hodgeman	14	3	21.4	4	28.6	1	7.1	6	42.9	0
Jackson	172	57	33.3	73	42.7	11	6.4	30	17.5	1
Jefferson	184	69	37.5	86	46.7	11	6.0	18	9.8	0
Jewell	31	6	19.4	21	67.7	3	9.7	1	3.2	0
Johnson	7,528	2,511	33.6	4,215	56.4	437	5.8	308	4.1	57
Kearny	63	11	17.7	37	59.7	5	8.1	9	14.5	1
Kingman	98	12	12.5	71	74.0	4	4.2	9	9.4	2
Kiowa	37	7	18.9	26	70.3	1	2.7	3	8.1	0
Labette	257	92	36.1	99	38.8	17	6.7	47	18.4	2
Lane	13	5	38.5	8	61.5	0	0.0	0	0.0	0
Leavenworth	1,013	269	26.7	573	57.0	51	5.1	113	11.2	7
Lincoln	28	4	14.3	22	78.6	2	7.1	0	0.0	0
Linn	109	54	50.0	41	38.0	4	3.7	9	8.3	1
Logan	43	13	31.0	18	42.9	4	9.5	7	16.7	1

Table 1. County of Kansas Resident Live Births by Adequacy of Prenatal Care Utilization (APNCU) Index
Kansas, 2015

County of Residence	Live Births	APNCU Category‡								n.s.
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Lyon	416	249	60.0	118	28.4	9	2.2	39	9.4	1
McPherson	336	124	37.0	164	49.0	18	5.4	29	8.7	1
Marion	109	54	50.0	44	40.7	3	2.8	7	6.5	1
Marshall	138	27	19.6	92	66.7	8	5.8	11	8.0	0
Meade	68	14	20.6	32	47.1	6	8.8	16	23.5	0
Miami	354	107	30.3	214	60.6	13	3.7	19	5.4	1
Mitchell	77	18	23.4	42	54.5	13	16.9	4	5.2	0
Montgomery	447	141	32.3	175	40.1	42	9.6	78	17.9	11
Morris	54	23	42.6	25	46.3	3	5.6	3	5.6	0
Morton	24	6	25.0	13	54.2	1	4.2	4	16.7	0
Nemaha	146	24	16.4	99	67.8	8	5.5	15	10.3	0
Neosho	189	45	23.8	96	50.8	12	6.3	36	19.0	0
Ness	33	8	24.2	19	57.6	2	6.1	4	12.1	0
Norton	61	10	16.4	29	47.5	11	18.0	11	18.0	0
Osage	158	65	41.1	74	46.8	2	1.3	17	10.8	0
Osborne	49	12	24.5	34	69.4	3	6.1	0	0.0	0
Ottawa	60	7	11.7	46	76.7	4	6.7	3	5.0	0
Pawnee	67	16	23.9	32	47.8	3	4.5	16	23.9	0
Phillips	50	8	16.0	27	54.0	9	18.0	6	12.0	0
Pottawatomie	362	101	28.0	204	56.5	13	3.6	43	11.9	1
Pratt	142	36	25.4	84	59.2	9	6.3	13	9.2	0
Rawlins	26	5	19.2	16	61.5	0	0.0	5	19.2	0
Reno	683	300	44.2	257	37.9	35	5.2	86	12.7	5
Republic	49	15	30.6	24	49.0	3	6.1	7	14.3	0
Rice	132	50	37.9	59	44.7	12	9.1	11	8.3	0
Riley	1,017	224	22.1	590	58.1	72	7.1	129	12.7	2
Rooks	58	10	17.2	37	63.8	5	8.6	6	10.3	0
Rush	37	13	35.1	16	43.2	5	13.5	3	8.1	0
Russell	74	16	21.6	49	66.2	4	5.4	5	6.8	0
Saline	729	171	23.5	418	57.4	70	9.6	69	9.5	1
Scott	51	22	43.1	20	39.2	3	5.9	6	11.8	0
Sedgwick	7,284	1,312	18.1	5,089	70.1	208	2.9	650	9.0	25
Seward	428	97	22.7	205	48.0	20	4.7	105	24.6	1
Shawnee	2,269	978	43.1	935	41.2	103	4.5	251	11.1	2
Sheridan	28	4	14.3	16	57.1	3	10.7	5	17.9	0
Sherman	84	23	27.4	41	48.8	10	11.9	10	11.9	0
Smith	50	13	26.0	25	50.0	6	12.0	6	12.0	0
Stafford	55	17	30.9	28	50.9	2	3.6	8	14.5	0
Stanton	39	11	28.2	17	43.6	4	10.3	7	17.9	0
Stevens	77	14	18.4	43	56.6	4	5.3	15	19.7	1
Sumner	290	91	31.5	177	61.2	7	2.4	14	4.8	1
Thomas	107	30	28.6	53	50.5	11	10.5	11	10.5	2
Trego	46	5	10.9	31	67.4	3	6.5	7	15.2	0
Wabaunsee	90	26	28.9	52	57.8	2	2.2	10	11.1	0
Wallace	20	5	25.0	10	50.0	2	10.0	3	15.0	0
Washington	86	27	31.4	51	59.3	3	3.5	5	5.8	0
Wichita	20	5	25.0	9	45.0	1	5.0	5	25.0	0
Wilson	98	30	30.6	57	58.2	2	2.0	9	9.2	0
Woodson	31	11	35.5	19	61.3	0	0.0	1	3.2	0
Wyandotte	2,763	688	25.1	1,244	45.4	370	13.5	441	16.1	20
n.s.	2	1	n/a	1	n/a	0	n/a	0	n/a	0

* Total number of live births in 2015.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable

Source: Kansas Department of Health and Environment
Bureau of Epidemiology and Public Health Informatics

Table 2. Number and Percent of Live Births by Birth Weight
by Adequacy of Prenatal Care Utilization (APNCU) Index
Kansas, 2015

Birth Weight (Grams)	Live Births*	APNCU Category †								n.s.‡
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Total	39,126	11,391	29.3	21,180	54.4	2,306	5.9	4,062	10.4	187
Under 2,500 (Low)	2,711	1,412	52.7	789	29.5	179	6.7	297	11.1	34
2,500-4,499 (Normal)	35,953	9,874	27.6	20,102	56.1	2,101	5.9	3,724	10.4	152
4,500 and Over (High)	459	105	22.9	289	63.0	26	5.7	39	8.5	0
n.s.‡	3	0	n/a	0	n/a	0	n/a	2	n/a	1

* Total number of live births in 2015.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable; the number is too small to calculate percent reliably and is suppressed.

Source: Kansas Department of Health and Environment
Bureau of Epidemiology and Public Health Informatics

Table 3. Number and Percent of Live Births by Population Groups
by Adequacy of Prenatal Care Utilization (APNCU) Index
Kansas, 2015

Population Groups	Live Births*	APNCU Category †								n.s.‡
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Total	39,126	11,391	29.3	21,180	54.4	2,306	5.9	4,062	10.4	187
White Non-Hispanic	27,717	8,555	31.0	15,572	56.4	1,289	4.7	2,181	7.9	120
Black Non-Hispanic	2,585	639	24.8	1,264	49.1	235	9.1	438	17.0	9
Native American Non-Hispanic	185	62	33.7	73	39.7	10	5.4	39	21.2	1
Asian/Pacific Islander Non-Hispanic	1,250	344	27.6	699	56.1	82	6.6	121	9.7	4
Other Non-Hispanic§	1,076	315	29.5	504	47.2	97	9.1	152	14.2	8
Hispanic Any Race	6,290	1,470	23.5	3,062	49.0	590	9.4	1,125	18.0	43
n.s.‡	23	6	n/a	6	n/a	3	n/a	6	n/a	2

* Total number of live births in 2015.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

§ Includes multiple races

n/a: Not applicable; the number is too small to calculate percent reliably and is suppressed.

Source: Bureau of Epidemiolgy and Public Health Informatics
Kansas Department of Health and Environment

Table 4. Number and Percent of Live Births by Selected Payor Groups
by Adequacy of Prenatal Care Utilization (APNCU) Index
Kansas, 2015

Pay Source	Live Births*	APNCU Category †								n.s. ‡
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Total	39,126	11,391	29.3	21,180	54.4	2,306	5.9	4,062	10.4	187
Medicaid	12,528	3,554	28.5	6,007	48.1	851	6.8	2,070	16.6	46
Private Insurance	21,299	6,929	32.7	12,556	59.2	784	3.7	936	4.4	94
Self Pay	2,531	365	14.6	1,058	42.3	401	16.0	675	27.0	32
Indian Health Service	26	8	30.8	9	34.6	3	n/a	6	23.1	0
Champus/Tricare	2,109	403	19.2	1,248	59.3	210	10.0	243	11.5	5
Other Government	211	51	24.2	101	47.9	15	7.1	44	20.9	0
Other/Unknown	422	81	19.7	201	48.8	42	10.2	88	21.4	10

* Total number of live births in 2015.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable; the number is too small to calculate percent reliably and is suppressed.

Source: Kansas Department of Health and Environment
Bureau of Epidemiolgy and Public Health Informatics

Table 5. Number and Percent of Live Births by Birth Order and Age Group of the Mother
by Adequacy of Prenatal Care Utilization (APNCU) Index
Kansas, 2015

First Order Live Births	Live Births*	APNCU Category †								n.s.‡
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Total	13,980	4,327	31.1	7,593	54.5	734	5.3	1,269	9.1	57
Age Groups										
10-14	14	4	n/a	3	n/a	1	n/a	6	42.9	0
15-19	2,059	544	26.6	970	47.4	158	7.7	376	18.4	11
20-24	4,485	1,313	29.4	2,378	53.3	267	6.0	507	11.4	20
25-29	4,265	1,330	31.3	2,512	59.1	182	4.3	227	5.3	14
30-34	2,385	849	35.7	1,330	56.0	93	3.9	105	4.4	8
35 and Over	772	287	37.4	400	52.1	33	4.3	48	6.3	4

Second and Higher Order Live Births	Live Births*	Adequate Plus		Adequate		Intermediate		Inadequate		n.s.‡
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Total	25,146	7,064	28.2	13,587	54.3	1,572	6.3	2,793	11.2	130
Age Groups										
15-19	417	90	21.7	179	43.1	47	11.3	99	23.9	2
20-24	4,779	1,216	25.6	2,367	49.8	357	7.5	815	17.1	24
25-29	8,077	2,233	27.8	4,446	55.3	491	6.1	872	10.8	35
30-34	7,863	2,286	29.2	4,463	57.1	440	5.6	632	8.1	42
35 and Over	4,007	1,236	31.1	2,132	53.6	237	6.0	375	9.4	27
n.s.‡	3	3	n/a	0	n/a	0	n/a	0	n/a	0

* Total number of live births in 2015.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted from total live births for percent calculation.

n/a: Not applicable; the number is too small to calculate percent reliably and is suppressed.

Source: Kansas Department of Health and Environment
Bureau of Epidemiolgy and Public Health Informatics

Table 6. Number and Percent of Live Births by Age Group of the Mother
by Adequacy of Prenatal Care Utilization (APNCU) Index
Kansas, 2015

Age Group	Live Births*	APNCU Category †								n.s.‡
		Adequate Plus		Adequate		Intermediate		Inadequate		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Total	39,126	11,391	29.3	21,180	54.4	2,306	5.9	4,062	10.4	187
Age Groups										
10-14	14	4	n/a	3	n/a	1	n/a	6	42.9	0
15-19	2,476	634	25.7	1,149	46.7	205	8.3	475	19.3	13
20-24	9,264	2,529	27.4	4,745	51.5	624	6.8	1,322	14.3	44
25-29	12,342	3,563	29.0	6,958	56.6	673	5.5	1,099	8.9	49
30-34	10,248	3,135	30.7	5,793	56.8	533	5.2	737	7.2	50
35 and Over	4,779	1,523	32.1	2,532	53.3	270	5.7	423	8.9	31
n.s.‡	3	3	n/a	0	n/a	0	n/a	0	n/a	0

* Total number of live births in 2015.

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate.

‡ Not Stated. Number of live births with insufficient information to calculate APNCU. This number is subtracted

n/a: Not applicable; the number is too small to calculate the percentage reliably and is suppressed.

Source: Kansas Department of Health and Environment
Bureau of Epidemiolgy and Public Health Informatics

Table 7. Number and Percent of Live Births by Percentages of Adequate or Better and Less Than Adequate* Prenatal Care by County of Resident, Kansas 2014-2015

County of Residence	Adequate or Better†			Less than Adequate		
	2014	2015	2014-2015	2014	2015	2014-2015
	Percent	Percent	% Change	Percent	Percent	% Change
Kansas	83.0	83.7	0.9	17.0	16.4	-3.5
Allen	79.5	75.7	-4.8	20.5	24.3	18.5
Anderson	79.8	81.0	1.4	20.2	19.0	-5.7
Atchison	77.6	81.1	4.5	22.4	18.9	-15.6
Barber	80.6	88.1	9.3	19.4 ‡	11.9 ‡	-38.7 ‡
Barton	86.1	86.7	0.8	13.9	13.3	-4.9
Bourbon	81.9	79.8	-2.6	18.1	20.2	11.8
Brown	72.6	77.4	6.6	27.4	22.6	-17.5
Butler	91.2	88.6	-2.9	8.8	11.4	30.7
Chase	90.0	79.2 ‡	-12.0	n/a	20.8 ‡	n/a
Chautauqua	75.0	82.9	10.6	25.0 ‡	17.1 ‡	-31.7 ‡
Cherokee	76.2	81.0	6.4	23.8	19.0	-20.5
Cheyenne	60.0	76.9	28.2 ‡	40.0 ‡	23.1 ‡	-42.3 ‡
Clark	72.2 ‡	76.0 ‡	5.2 ‡	n/a	24.0 ‡	n/a
Clay	79.4	83.1	4.7	20.6	16.9	-18.0
Cloud	80.2	78.7	-1.8	19.8	21.3	7.4
Coffey	83.7	85.5	2.2	16.3	14.5 ‡	-11.1 ‡
Comanche	87.5	90.5 ‡	3.4 ‡	n/a	n/a	n/a
Cowley	82.1	82.2	0.2	17.9	17.8	-0.9
Crawford	76.8	74.1	-3.6	23.2	25.9	11.8
Decatur	71.4	85.3	19.4	28.6 ‡	14.7 ‡	-48.5 ‡
Dickinson	83.7	88.6	5.8	16.3	11.4	-29.8
Doniphan	83.3	82.5	-1.0	16.7 ‡	17.5	5.2 ‡
Douglas	87.2	89.2	2.3	12.8	10.8	-15.5
Edwards	82.1	82.8	0.9	17.9 ‡	17.2 ‡	-3.9 ‡
Elk	78.1	76.2 ‡	-2.5	21.9 ‡	23.8 ‡	8.8 ‡
Ellis	83.8	86.8	3.6	16.2	13.2	-18.7
Ellsworth	80.0	86.2	7.7	20.0 ‡	13.8 ‡	-30.8 ‡
Finney	70.1	71.5	2.0	29.9	28.5	-4.7
Ford	66.6	61.1	-8.4	33.4	38.9	16.7
Franklin	83.5	86.5	3.6	16.5	13.5	-18.1
Geary	73.5	74.1	0.8	26.5	25.9	-2.1
Gove	78.6	75.7	-3.7	21.4 ‡	24.3 ‡	13.5 ‡
Graham	70.8 ‡	85.7 ‡	21.0 ‡	29.2 ‡	n/a	n/a
Grant	74.4	70.0	-5.9	25.6	30.0	17.3
Gray	75.0	74.1	-1.2	25.0	25.9	3.7
Greeley	52.6 ‡	68.8 ‡	30.6 ‡	47.4 ‡	n/a	n/a
Greenwood	84.6	78.3	-7.5	15.4 ‡	21.7	41.3 ‡
Hamilton	76.7	82.4	7.3	23.3 ‡	17.6 ‡	-24.1 ‡
Harper	83.3	90.0	8.0	16.7	10.0 ‡	-40.0 ‡
Harvey	88.0	90.9	3.3	12.0	9.1	-24.1
Haskell	75.5	80.4	6.4	24.5 ‡	19.6 ‡	-19.8 ‡
Hodgeman	72.0 ‡	50.0 ‡	-30.6 ‡	28.0 ‡	50.0 ‡	78.6 ‡
Jackson	76.0	76.0	0.0	24.0	24.0	0.0
Jefferson	93.8	84.2	-10.2	6.2 ‡	15.8	153.6 ‡
Jewell	81.8	87.1	6.5	18.2 ‡	n/a	n/a
Johnson	90.0	90.0	0.0	10.0	10.0	-0.1
Kearny	75.8	77.4	2.1	24.2	22.6	-6.7
Kingman	84.9	86.5	1.8	15.1 ‡	13.5	-10.1 ‡
Kiowa	78.6	89.2	13.5	21.4 ‡	n/a	n/a
Labette	80.5	74.9	-6.9	19.5	25.1	28.4
Lane	73.7 ‡	100.0 ‡	35.7 ‡	n/a	n/a	n/a
Leavenworth	83.5	83.7	0.2	16.5	16.3	-1.0
Lincoln	76.5	92.9	21.4	23.5 ‡	n/a	n/a
Linn	84.5	88.0	4.0	15.5	12.0	-22.1
Logan	86.5	73.8	-14.7	n/a	26.2 ‡	n/a

County of Residence	Adequate or Better†			Less than Adequate		
	2014	2015	2014-2015	2014	2015	2014-2015
	Percent	Percent	% Change	Percent	Percent	% Change
Lyon	82.8	88.4	6.8	17.2	11.6	-32.8
McPherson	92.2	86.0	-6.8	7.8 ‡	14.0	81.0 ‡
Marion	86.9	90.7	4.4	13.1	9.3 ‡	-29.4 ‡
Marshall	90.0	86.2	-4.2	10.0	13.8	38.1
Meade	78.6	67.6	-13.9	21.4 ‡	32.4	51.0 ‡
Miami	90.2	90.9	0.8	9.8	9.1	-7.3
Mitchell	82.6	77.9	-5.7	17.4	22.1	26.9
Montgomery	78.8	72.5	-8.1	21.2	27.5	30.1
Morris	85.2	88.9	4.3	14.8 ‡	11.1 ‡	-24.7 ‡
Morton	72.5	79.2 ‡	9.2	27.5 ‡	20.8 ‡	n/a
Nemaha	84.7	84.2	-0.6	15.3	15.8	3.1
Neosho	79.4	74.6	-6.0	20.6	25.4	23.0
Ness	81.1	81.8	0.9	18.9 ‡	18.2 ‡	-3.9 ‡
Norton	57.9	63.9	10.4	42.1	36.1	-14.3
Osage	89.1	88.0	-1.2	10.9	12.0	10.1
Osborne	82.6	93.9	13.6	17.4 ‡	n/a	n/a
Ottawa	83.7	88.3	5.6	16.3 ‡	11.7 ‡	-28.5 ‡
Pawnee	70.3	71.6	1.9	29.7	28.4	-4.5
Phillips	72.6	70.0	-3.6	27.4	30.0	9.5
Pottawatomie	86.3	84.5	-2.1	13.7	15.5	13.5
Pratt	90.4	84.5	-6.5	9.6	15.5	61.6
Rawlins	82.4	80.8	-1.9 ‡	17.6 ‡	19.2 ‡	n/a
Reno	82.4	82.2	-0.3	17.6	17.8	1.4
Republic	86.5	79.6	-8.0	13.5 ‡	20.4 ‡	51.6 ‡
Rice	78.3	82.6	5.4	21.7	17.4	-19.6
Riley	78.3	80.2	2.5	21.7	19.8	-8.8
Rooks	89.8	81.0	-9.8	10.2 ‡	19.0 ‡	86.5 ‡
Rush	95.2 ‡	78.4	-17.7 ‡	n/a	21.6 ‡	n/a
Russell	84.1	87.8	4.4	15.9	12.2 ‡	-23.3 ‡
Saline	80.0	80.9	1.2	20.0	19.1	-4.7
Scott	79.2	82.4	4.0	20.8	17.6 ‡	-15.3 ‡
Sedgwick	87.1	88.2	1.2	12.9	11.8	-8.1
Seward	64.7	70.7	9.3	35.3	29.3	-17.1
Shawnee	82.2	84.4	2.7	17.8	15.6	-12.3
Sheridan	70.8 ‡	71.4	0.8 ‡	29.2 ‡	28.6 ‡	-2.0 ‡
Sherman	77.2	76.2	-1.3	22.8	23.8	4.5
Smith	71.4	76.0	6.4	28.6 ‡	24.0 ‡	-16.0 ‡
Stafford	83.0	81.8	-1.4	17.0 ‡	18.2 ‡	7.1 ‡
Stanton	80.8	71.8	-11.1	n/a	28.2 ‡	n/a
Stevens	65.7	75.0	14.2	34.3	25.0	-27.2
Sumner	86.9	92.7	6.7	13.1	7.3	-44.4
Thomas	81.9	79.0	-3.5	18.1	21.0	15.7
Trego	80.6	78.3	-2.8	19.4 ‡	21.7 ‡	n/a
Wabaunsee	82.9	86.7	4.6	17.1 ‡	13.3 ‡	-22.2 ‡
Wallace	68.8 ‡	75.0 ‡	9.1 ‡	n/a	25.0 ‡	n/a
Washington	84.8	90.7	6.9	15.2 ‡	9.3 ‡	-38.6 ‡
Wichita	71.4	70.0 ‡	-2.0 ‡	28.6 ‡	30.0 ‡	5.0 ‡
Wilson	84.1	88.8	5.5	15.9	11.2 ‡	-29.4 ‡
Woodson	77.1	96.8	25.4	22.9 ‡	n/a	n/a
Wyandotte	69.3	70.4	1.6	30.7	29.6	-3.6

* Adequate and Better = Adequate + Adequate Plus Care; Less than Adequate= Intermediate + Inadequate Care Categories

† Includes only Kansas resident live births for which number of prenatal visits, date of first prenatal visit and date of last menses were reported on the birth certificate

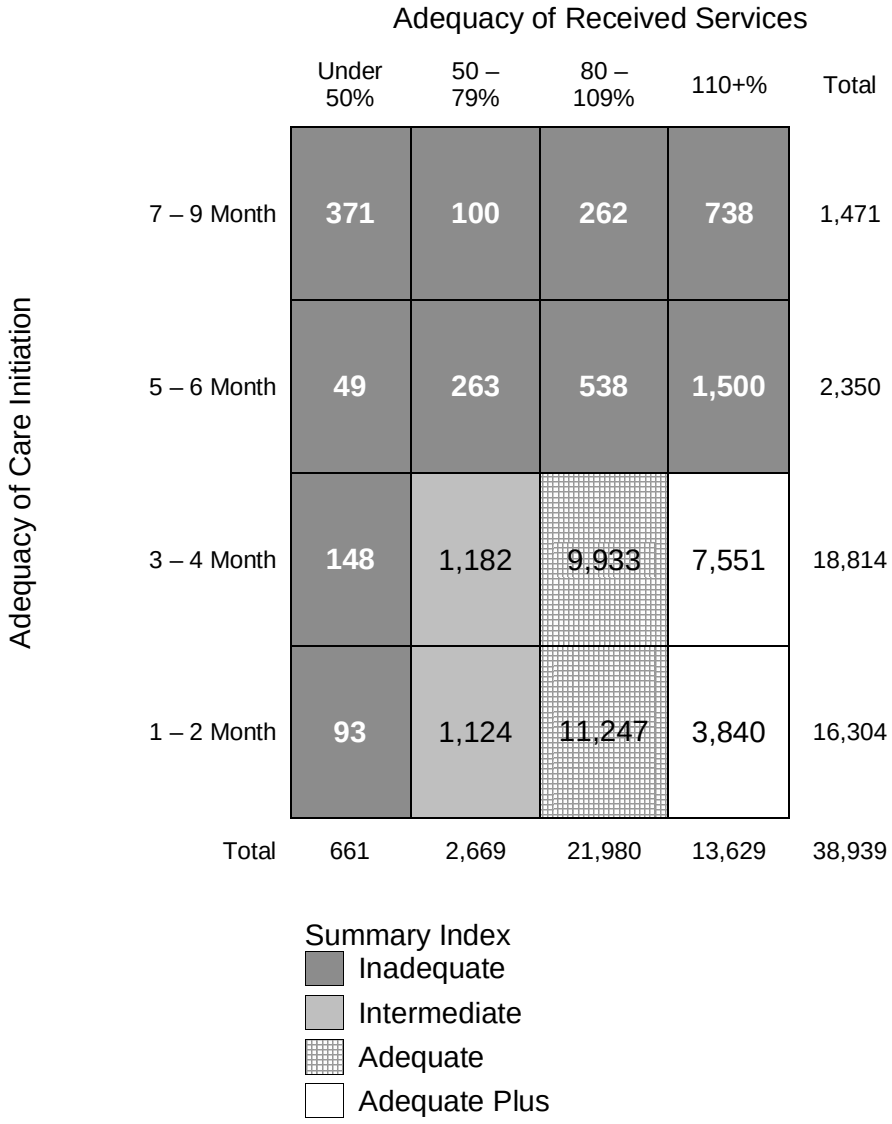
‡ A percentage in the calculation of the change in percentage has a relative standard error greater than 30, and should be used with caution since it does not meet the standard of reliability.

n/a: Not applicable; the number is too small to calculate the percentage reliably and is suppressed.

Source: Kansas Department of Health and Environment

Bureau of Epidemiolgy and Public Health Informatics

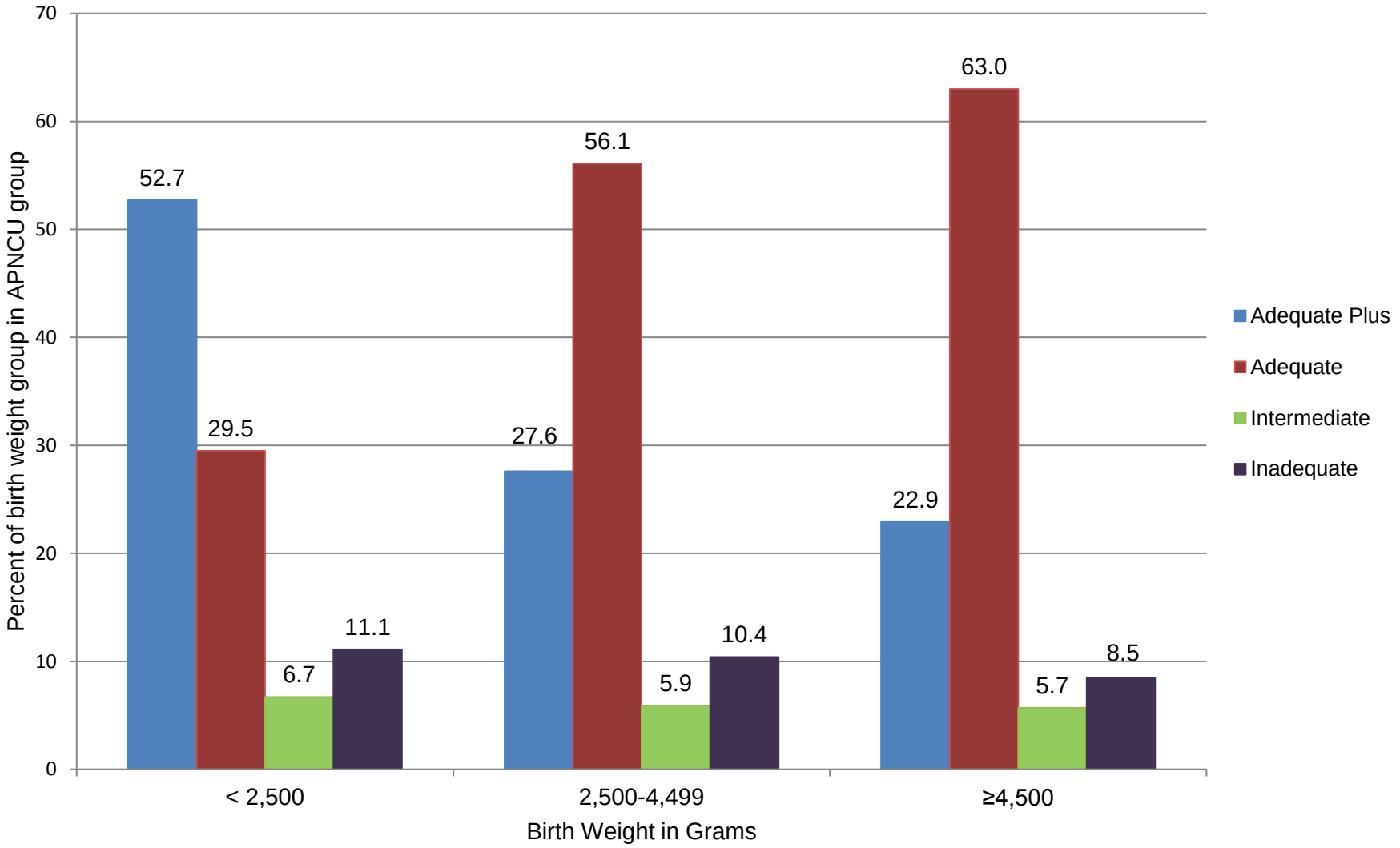
Figure 1. Number of Live Births by Adequacy of Prenatal Care Utilization (APNCU) among Kansas Residents*, 2015



* Includes 99.5 percent (38,939) of 39,126 total Kansas resident births for which the number of prenatal visits, date of first prenatal visit, and the date of last menses were reported on the birth certificate.

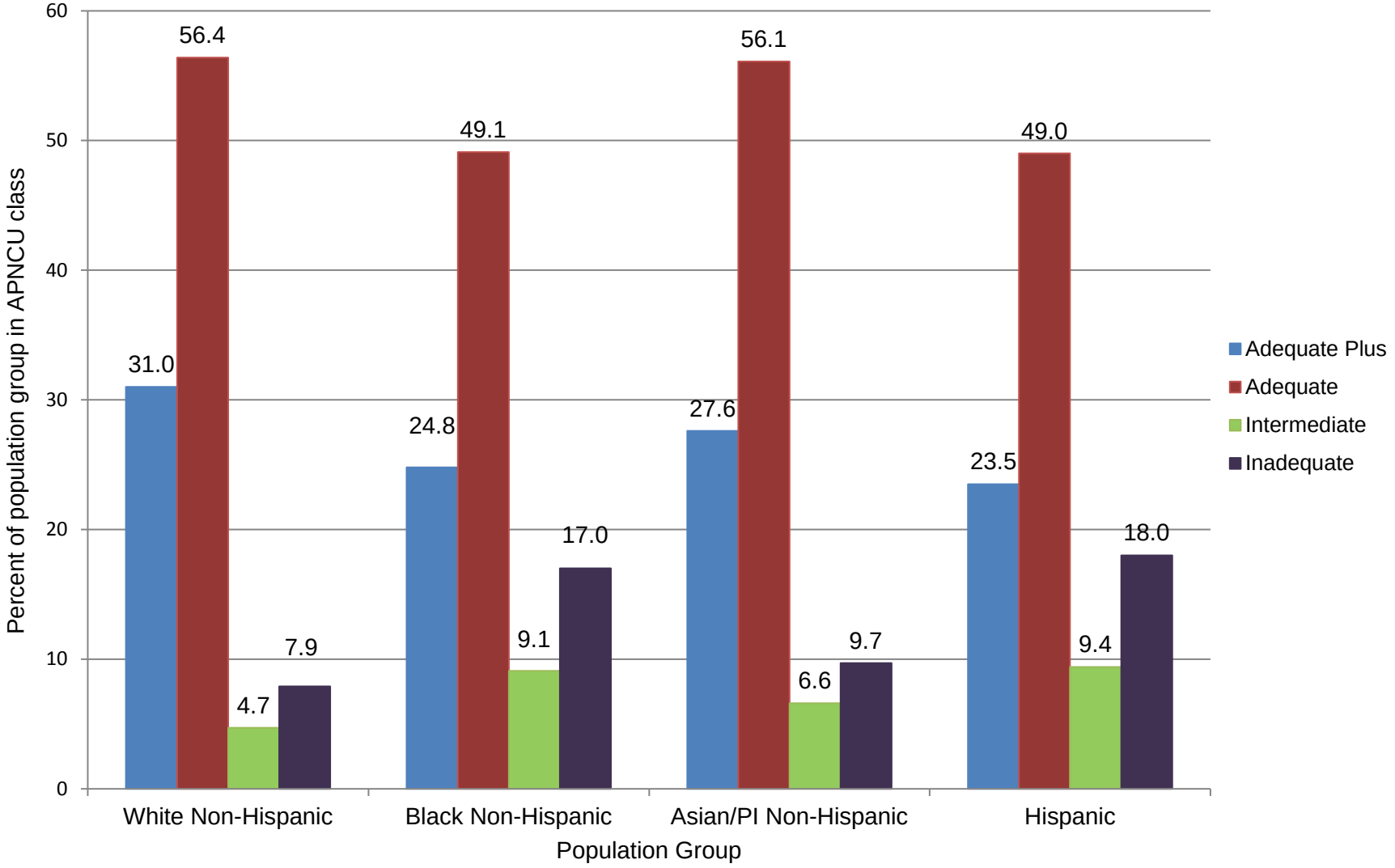
Source: Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics

Figure 2. Percent of Adequacy of Prenatal Care Utilization (APNCU) by Birth Weight, Kansas, 2015



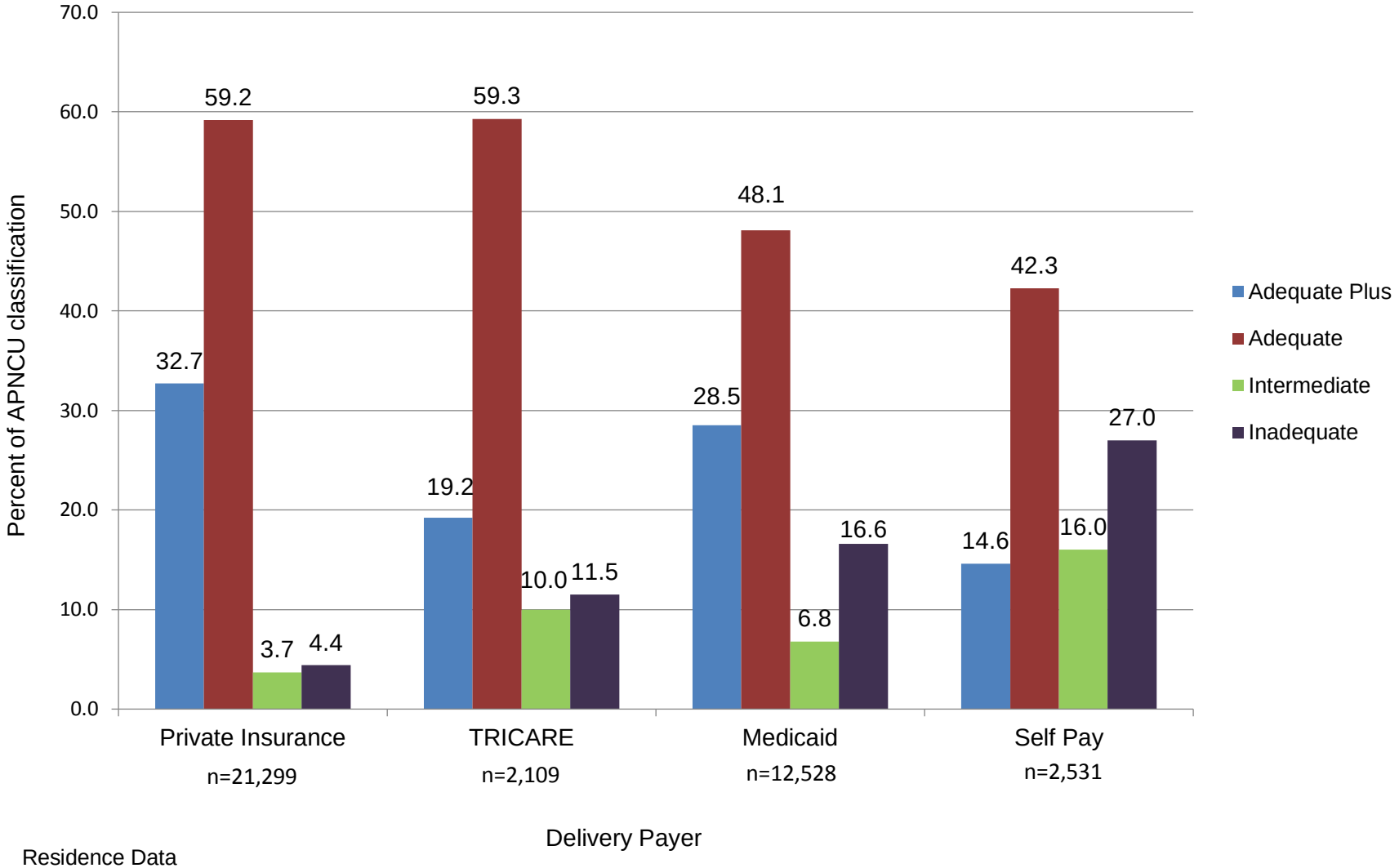
Residence Data
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 3. Percent of Adequacy of Prenatal Care Utilization (APNCU) by Population Group, Kansas, 2015



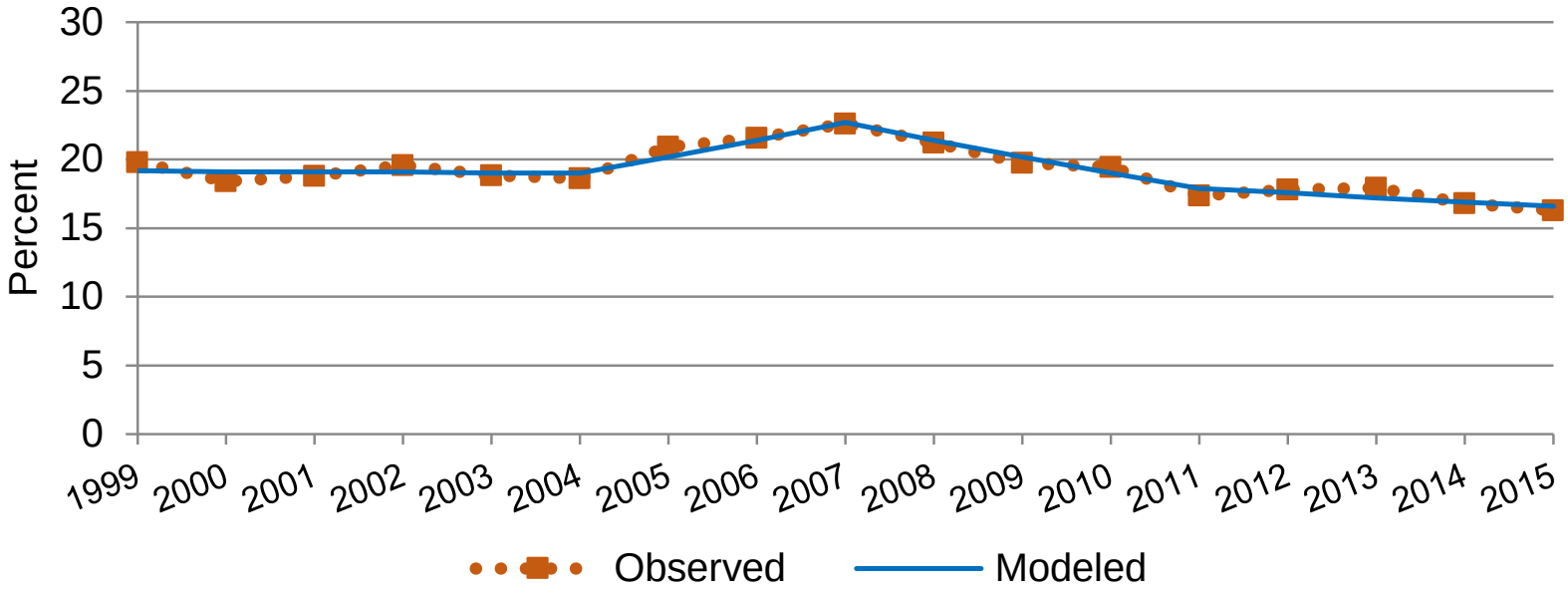
Residence Data
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 4. Percent of Adequacy of Prenatal Care Utilization (APNCU) by Selected Delivery Payor Groups, Kansas, 2015



Residence Data
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 5. Trends in Prenatal Care Where Care Was Less Than Adequate*, Kansas, 1999-2015



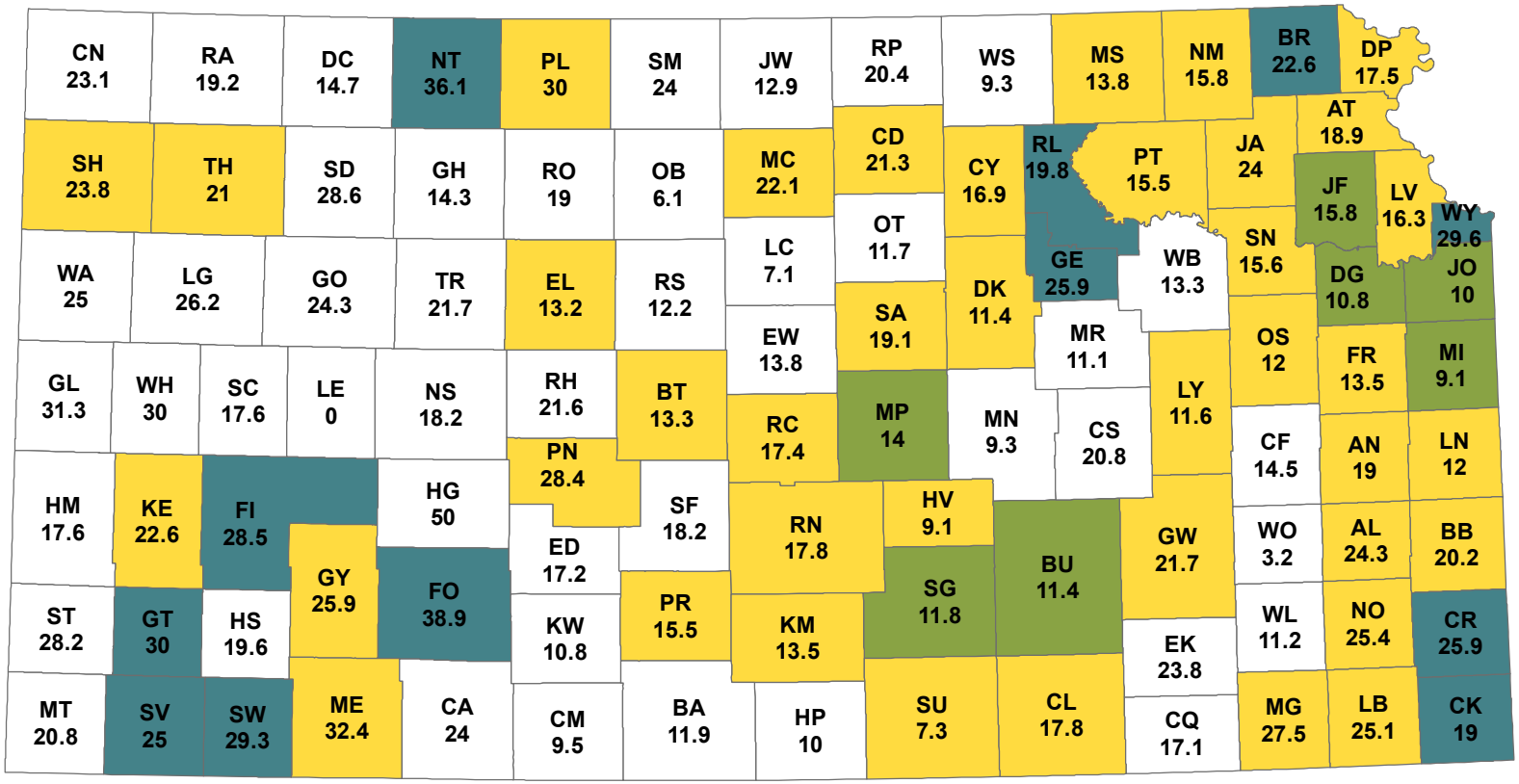
*Less than adequate prenatal care is the combination of Inadequate and Intermediate prenatal care on the Adequacy of Prenatal Care (APNCU) Index.

Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

APC = -0.2 (1999-2004)
APC = 6.2 (2004-2007)
APC = -5.7 (2007-2011)†
APC = -1.9 (2011-2015)

†The Annual Percentage Change (APC) is significantly different from zero at alpha=0.05.

Figure 6. Percentage of Live Births Having Less than Adequate Prenatal Care* by County, Kansas 2015



Statewide: 16.4 Percent
Kansas Resident Live Births

Number too small to make reliable comparison of percentages

County percent not statistically different from state percent

County percent statistically above state percent

County percent statistically below state percent

* Less than adequate care is the combination of inadequate and intermediate categories of the Adequacy of Prenatal Care (APNCU) Index

Source: Kansas Department of Health and Environment
Bureau of Epidemiology and Public Health Informatics

Technical Notes

Preparation of the Adequacy of Prenatal Care Utilization Index requires the use of information from four items on the birth certificate and a calculated value for the month care began calculated from the difference of the date of first prenatal care visit and the date of last menses. If any of these values are unknown or can't be calculated, the Index value will be not stated. The data elements used for the calculation, database field names, and item numbers from the standard Kansas Birth Certificate are:

- Number of prenatal care visits– NPREV (Item 49)
- Month prenatal care visits began – Calculated from DOFP and DLMP (Items 47 & 50)
- Sex of infant – ISEX (Item 4)
- Gestational age – OWGEST (Item 51)
- Birth weight in grams – BWG (Item 5)

2005 Revisions to Certificates. Beginning with the reporting of 2005 data, Kansas implemented the latest revision of the U.S. standard live birth certificate.

Please note that not all states have implemented the use of the new certificate format. Therefore, items which were added or significantly revised will most likely not have information provided for Kansas residents who had births in another state. In such cases, the non-responses are shown as "not stated" (n.s.) in the tables and have been removed from totals when calculating percentages.

Certain data elements (see below) used in the Adequacy of Prenatal Care Utilization Index (APNCU) have changed considerably with the use of the revised birth certificate. These changes can affect comparability with previous years APNCU data.

Month prenatal care began. Prior to 2005, the mother or prenatal care provider reported the month of pregnancy when the mother began prenatal care. Beginning in 2005, this approach was replaced by one that subtracted the last normal menses date from the date of first prenatal care visit. Because exact dates are harder to get, month prenatal care began is missing more often. Records missing this information have been removed from totals when calculating percentages.

As a result of changes in reporting, levels of prenatal care utilization based on the new revised data are lower than those based on data from previous certificates. For example, 2004 data for Kansas indicates that 86.5 percent of residents began care in the first trimester compared to 74.1 percent based on the 2009 data derived from the revised birth certificate. The APNCU showed an increase in the proportion of women receiving less than adequate care between 2004 (18.6 percent) and 2009 (21.0 percent). Much of the difference between 2004 and 2009 is related to changes in reporting and not to changes in prenatal care utilization. Accordingly, prenatal care data in this report is not directly comparable to data collected from previous certificates.

Race-Ethnicity. The revised certificate contains significant changes in the way self-reported race and ethnicity are collected. The race item was revised to allow the

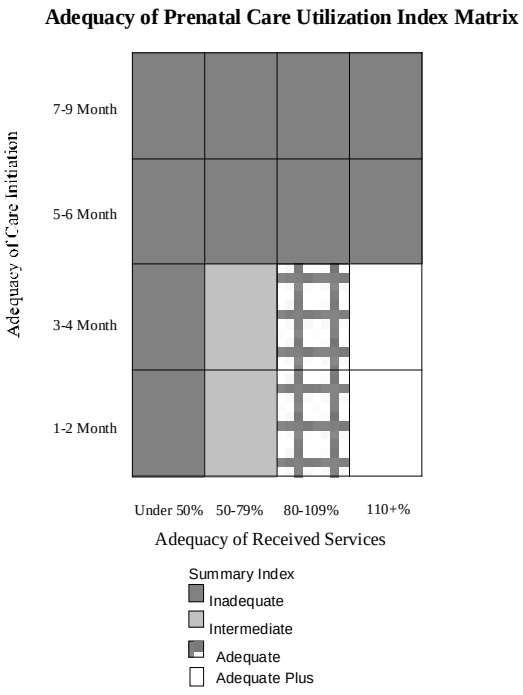
reporting of multiple races and can capture up to 15 categories and eight literal entries. In addition, Hispanic origin is now collected as a separate question from ancestry. These changes were implemented to provide a better picture of the nation's variation in race and Hispanic origin. The expanded racial and origin categories are compliant with the provisions of the Statistical Policy Directive No. 15, Race and Ethnic Standards for Federal Statistics and Administrative Reporting, issued by the Office of Management and Budget (OMB) in 1997.

For this report, race and Hispanic origin categories are combined and labeled as population groups. Self-reported single race data are utilized for White non-Hispanic, Black non-Hispanic, Native American non-Hispanic, Asian/Pacific Islander non-Hispanic, and Other non-Hispanic. If more than one racial category is checked, the person's race is classified as "Multiple" and is collapsed into the Other non-Hispanic category. Data shown for Hispanic persons include all persons of Hispanic origin of any race. These particular groupings are categories that reflect the cultural and ethnic identities of subgroups of the population commonly addressed in the public health field and on which health disparities can be measured.

Criteria for the Kansas Adequacy of Prenatal Care Utilization (APNCU) Index

I. Month prenatal care began
(Adequacy of Initiation of Prenatal Care)
- Adequate Plus: 1st or 2nd month
- Adequate: 3rd or 4th month Intermediate: 5th or 6th month
- Inadequate: 7th month or later, or no prenatal care

II. Proportion of the number of visits Recommended by the American College of Obstetricians and Gynecologists (ACOG) received from the time prenatal care began until delivery (Adequacy of Received Services)
- Adequate Plus: 110% or more
- Adequate: 80% - 109%
- Intermediate: 50% - 79%
- Inadequate: less than 50%



III. Summary Adequacy of Prenatal Care Utilization Index:
- Adequate Plus: Prenatal care begun by the 4th month and 110% or more of recommended visits received.
- Adequate: Prenatal care begun by the 4th month and 80% - 109% of recommended visits received.
- Intermediate: Prenatal care begun by the 4th month and 50% - 79% of recommended visits received.

Inadequate: Prenatal care begun after the 4th month or less than 50% of recommended visits received

APNCU Reference: Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index. *American Journal of Public Health*, 1994; 84:1414-1420.

Definitions

Adequacy of Prenatal Care Utilization (APNCU) Index: An assessment of the adequacy of prenatal care measured by the APNCU Index (often referred to as the Kotelchuck Index), a composite measure based on gestational age of the newborn, the trimester prenatal care began, and the number of prenatal visits made.

Adequacy of Received Services: A measure of the adequacy of prenatal services received based on when care began in the pregnancy.

Adequacy of Care Initiation: A measure of the adequacy of prenatal care services based on the number of prenatal care visits during the pregnancy.

Live Birth: The complete expulsion or extraction of a product of human conception from its mother, irrespective of the duration of pregnancy, that, after such expulsion or extraction, shows any evidence of life such as breathing, heartbeat, pulsation of the umbilical cord, or voluntary muscle movement, whether or not the umbilical cord has been cut or the placenta attached.

Low Birth Weight: Weight of a fetus or infant at delivery which is less than 2,500 grams (less than five pounds, 8 ounces).

Very Low Birth Weight: Weight of a fetus or infant at delivery which is less than 1,500 grams (less than 3 pounds, 5 ounces).

Population Group: A reporting matrix of race and Hispanic origin (ethnicity) information comprised of distinct categories.

Kansas Department of Health and Environment
Office of Vital Statistics

CERTIFICATE OF LIVE BIRTH

115-

State File Number

1. CHILD'S NAME (First, Middle, Last, Suffix)		2. DATE OF BIRTH (Month, Day, Year)	3. TIME OF BIRTH M
4. SEX	5. BIRTH WEIGHT (Grams)	6. CITY, TOWN, OR LOCATION OF BIRTH	7. COUNTY OF BIRTH
8. PLACE OF BIRTH ☐ Hospital ☐ Freestanding Birthing Center ☐ Home Birth ☐ Clinic/Doctor's Office ☐ Other (Specify) _____		9. FACILITY NAME (If not institution, give street and number)	
10. I CERTIFY THAT THE STATED INFORMATION CONCERNING THIS CHILD IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF. Certifier's Signature ➢ _____		11. DATE SIGNED (Month, Day, Year)	12. ATTENDANT'S NAME AND TITLE (Type) Name _____ ☐ M.D. ☐ D.O. ☐ C.N.M. ☐ Other Midwife ☐ Other (Specify) _____
13. Certifier's Name and Title (Type) Name _____ ☐ M.D. ☐ D.O. ☐ Hosp Adm. ☐ C.N.M. ☐ Other Midwife ☐ Other (Specify) _____		14. ATTENDANT'S MAILING ADDRESS (Street and Number or Rural Route, City, or Town, State, Zip Code)	
15. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)			16. MOTHER'S LAST NAME PRIOR TO FIRST MARRIAGE
17. DATE OF BIRTH (Month, Day, Year)	18. BIRTHPLACE (State, Territory, or Foreign Country)		19. PRESENT RESIDENCE-STATE
20. COUNTY	21. CITY, TOWN, OR LOCATION	22. STREET AND NUMBER OF PRESENT RESIDENCE	
23. ZIP CODE	24. INSIDE CITY LIMITS? ☐ YES ☐ NO	25. MOTHER'S MAILING ADDRESS (If same as residence, leave blank)	
26. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)		27. DATE OF BIRTH (Month, Day, Year)	28. BIRTHPLACE (State, Territory, or Foreign Country)
29. PARENTS REQUEST SOCIAL SECURITY NUMBER ISSUANCE? ☐ YES ☐ NO		30. IMMUNIZATION REGISTRY I wish to enroll my child in the Immunization Registry ☐ YES ☐ NO	
31. I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THE CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. Signature of Parent (or Other Informant) ➢ _____		32. DATE SIGNED (Month, Day, Year)	33 DATE FILED BY STATE REGISTRAR (Month, Day, Year) (Vital Statistics only)

34. IF HOME BIRTH, WAS DELIVERY PLANNED AT HOME? ☐ Yes ☐ No ☐ Unknown

35. MOTHER'S SOCIAL SECURITY NUMBER

36. FATHER'S SOCIAL SECURITY NUMBER

37a. WAS MOTHER EVER MARRIED? ☐ Yes ☐ No ☐ Unknown

37b. MOTHER MARRIED? (At birth, conception or any time between) ☐ Yes ☐ No ☐ Unknown

37c. IF NO, HAS PATERNITY ACKNOWLEDGMENT BEEN SIGNED? ☐ Yes ☐ No

37d. MOTHER REFUSES TO GIVE HUSBAND'S INFORMATION ☐ Yes ☐ No

38. WHAT IS THE PRIMARY LANGUAGE SPOKEN IN THE HOME? ☐ English ☐ Spanish ☐ Vietnamese ☐ German ☐ French ☐ Russian ☐ Ukrainian ☐ Mandarin ☐ Cantonese ☐ Sign Language ☐ Other *(Specify)* _____

39. PARENT'S HISPANIC ORIGIN (Check the box or boxes that best describes whether the parent is Spanish, Hispanic, or Latino. Check the "No" box if the parent is not Spanish, Hispanic, or Latino.)

39a. MOTHER
- ☐ No, not Spanish/ Hispanic/Latina
- ☐ Yes, Mexican/Mexican American/Chicana
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, Central American
- ☐ Yes, South American
- ☐ Yes, other Spanish/ Hispanic/Latina

(Specify)_____
- ☐ Unknown

39b. FATHER
- ☐ No, not Spanish/ Hispanic/Latino
- ☐ Yes, Mexican/Mexican American/Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, Central American
- ☐ Yes, South American
- ☐ Yes, other Spanish/ Hispanic/Latino

(Specify)_____
- ☐ Unknown

40. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)

40a. MOTHER
- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native (Name of the enrolled or principal tribes) _____
- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean
- ☐ Vietnamese
- ☐ Other Asian (Specify) _____
- ☐ Native Hawaiian
- ☐ Guamanian or Chamorro
- ☐ Samoan
- ☐ Other Pacific Islander (Specify) _____
- ☐ Other (Specify) _____
- ☐ Unknown

40b. FATHER
- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native (Name of the enrolled or principal tribes) _____
- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean
- ☐ Vietnamese
- ☐ Other Asian (Specify) _____
- ☐ Native Hawaiian
- ☐ Guamanian or Chamorro
- ☐ Samoan
- ☐ Other Pacific Islander (Specify) _____
- ☐ Other (Specify) _____
- ☐ Unknown

41. ANCESTRY - What is the parents' ancestry or ethnic origin?- Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)

41a. MOTHER

41b. FATHER

42. OCCUPATION AND BUSINESS/INDUSTRY

	Occupation	Business/Industry (Do not give name of company.)
42a. MOTHER (Most recent)		42c. MOTHER
42b. FATHER (Usual)		42d. FATHER

43. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery.)

43a. MOTHER'S EDUCATION
- ☐ 8th grade or less
- ☐ 9th - 12th grade; no diploma
- ☐ High school graduate or GED
- ☐ Some College credit, but no degree
- ☐ Associate degree (e.g., AA,AS)
- ☐ Bachelor's degree (e.g., BA, AB, BS)
- ☐ Unknown
- ☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
- ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

43b. FATHER'S EDUCATION
- ☐ 8th grade or less
- ☐ 9th - 12th grade; no diploma
- ☐ High school graduate or GED
- ☐ Some College credit, but no degree
- ☐ Associate degree (e.g., AA,AS)
- ☐ Bachelor's degree (e.g., BA, AB, BS)
- ☐ Unknown
- ☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
- ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

44. PREVIOUS LIVE BIRTHS (Do not include this child.)

44a. Now living Number _____ ☐ None

44b. Now dead Number _____ ☐ None

44c. DATE OF LAST LIVE BIRTH (Month, Year)

45. NUMBER OF OTHER OUTCOMES (Spontaneous or induced losses or ectopic or stillbirth pregnancies)

45a. Before 20 weeks Number _____ ☐ None

45b. 20 weeks & over Number _____ ☐ None

45c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)

46. PRENATAL CARE? ☐ Yes ☐ No

47. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)

48. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)

49. PRENATAL VISITS-Total Number (If none, enter "0")

50. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)

51. OBSTETRIC ESTIMATE OF GESTATION (Completed Weeks)

52. PLURALITY-Single, Twin, Triplet, etc. (Specify)

53. IF NOT A SINGLE BIRTH – Born First, Second, Third, etc. (Specify)

54. TOTAL LIVE BIRTHS AT THIS DELIVERY

55. IS INFANT ALIVE AT THE TIME OF THIS REPORT? ☐ Yes ☐ No ☐ Unknown

56. IS INFANT BEING BREAST-FED AT DISCHARGE? ☐ Yes ☐ No ☐ Unknown

57. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy? ☐ Yes ☐ No ☐ Unknown

For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked **per day** during each time period. If none, enter "0".

Average number of cigarettes or packs of cigarettes **smoked per day** for each period:

	No.	No.
Three months before pregnancy:	_____ cigarettes or	_____ packs
First three months of pregnancy:	_____ cigarettes or	_____ packs
Second three months of pregnancy:	_____ cigarettes or	_____ packs
Third Trimester of pregnancy:	_____ cigarettes or	_____ packs

58. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY
- ☐ Medicaid
- ☐ Private/Employer Ins.
- ☐ Self-pay
- ☐ Indian Health Service government
- ☐ CHAMPUS/TRICARE
- ☐ Other
- ☐ Other (Specify) _____
- ☐ Unknown

59. MOTHER'S MEDICAL RECORD NO.

60. NEWBORN'S MEDICAL RECORD NO.

61. MOTHER TRANSFERRED IN FOR DELIVERY DUE TO MATERNAL, MEDICAL, OR FETAL INDICATIONS? ☐ Yes ☐ No (If yes, enter facility name)

FACILITY TRANSFERRED FROM:

62. INFANT TRANSFERRED (Within 24 hours of delivery) ☐ Yes ☐ No (If yes, enter facility name)

FACILITY TRANSFERRED TO:

CHILD'S NAME _____ MOTHER'S NAME _____

PRENATAL (Birth)

63. NUTRITION OF MOTHER

1. Height _____
2. Prepregnancy Weight _____
3. Weight at delivery _____
4. Did mother get WIC food for herself?
   Yes _____ No _____
   Unknown _____

64. MEDICAL RISK FACTORS (Check all that apply.)

1. ☐ Diabetes, prepregnancy
2. ☐ Diabetes, gestational
3. Hypertension
   - ☐ Prepregnancy (Chronic)
   - ☐ Gestational (PIH, preeclampsia)
   - ☐ Eclampsia
4. ☐ Previous preterm birth
5. ☐ Other previous poor pregnancy outcome (SGA, perinatal death, etc.)
6. ☐ Vaginal bleeding during this pregnancy prior to labor
7. ☐ Pregnancy resulted from infertility treatment (If yes, check all that apply.)
   - ☐ Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination
   - ☐ Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))
8. ☐ Mother had a previous cesarean delivery, if yes, how many? Number: _____
9. ☐ Alcohol use
   No. of drinks per week: _____
10. ☐ None of the above

65. METHOD OF DELIVERY

1. Forceps attempted? Yes ____ No ____
   Successful Yes _____ No _____
2. Vacuum extraction attempted?
   Yes _____ No _____
   Successful Yes _____ No _____
3. Fetal presentation at delivery
   - ☐ Cephalic
   - ☐ Breech
   - ☐ Other
4. Final route and method of delivery (check one)
   - ☐ Vaginal/spontaneous
   - ☐ Vaginal/forceps
   - ☐ Vaginal/vacuum
   - ☐ Cesarean, if cesarean was a trial of labor attempted?
     Yes _____ No _____

LABOR-DELIVERY/NEWBORN

66. OBSTETRICAL PROCEDURES (Check all that apply.)

1. ☐ Cervical cerclage
2. ☐ Tocolysis
3. External cephalic version:
   - ☐ Successful
   - ☐ Failed
4. ☐ None of the above

67. ONSET OF LABOR (Check all that apply.)

1. ☐ Premature Rupture of the Membranes (prolonged, ≥ 12 hours)
2. ☐ Precipitous Labor (< 3 hrs)
3. ☐ Prolonged Labor (≥ 20 hrs)
4. ☐ None of the above

68. CHARACTERISTICS OF LABOR AND DELIVERY (Check all that apply.)

1. ☐ Induction of labor
2. ☐ Augmentation of labor
3. ☐ Non-vertex presentation
4. ☐ Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery
5. ☐ Antibiotics received by the mother during labor
6. ☐ Clinical chorioamnionitis diagnosed during labor or maternal temperature ≥ 38 C (100.4 F)
7. ☐ Moderate/heavy meconium staining of the amniotic fluid
8. ☐ Fetal intolerance of labor: (examples: in-utero resuscitative measures, further fetal assessment, or operative delivery)
9. ☐ Epidural or spinal anesthesia during labor
10. ☐ None of the above

69. MATERNAL MORBIDITY
(Check all that apply.)
(These are complications associated with labor and delivery.)

1. ☐ Maternal transfusion
2. ☐ Third or fourth degree perineal laceration
3. ☐ Ruptured uterus
4. ☐ Unplanned hysterectomy
5. ☐ Admission to intensive care unit
6. ☐ Unplanned operating room procedure following delivery
7. ☐ None of the above

70. INFECTIONS PRESENT AND/OR TREATED
(During this pregnancy, check all that apply.)

1. ☐ Gonorrhea
2. ☐ Syphilis
3. ☐ Herpes Simplex Virus (HSV)
4. ☐ Chlamydia
5. ☐ Hepatitis B
6. ☐ Hepatitis C
7. ☐ AIDS or HIV antibody
8. ☐ None of the above

71. ABNORMAL CONDITIONS OF NEWBORN (Check all that apply)

1. ☐ Assisted ventilation required immediately following delivery
2. ☐ Assisted ventilation required for more than six hours
3. ☐ NICU admission
4. ☐ Newborn given surfactant replacement therapy
5. ☐ Antibiotics received by the newborn for suspected neonatal sepsis
6. ☐ Seizure or serious neurologic dysfunction
7. ☐ Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention
8. ☐ None of the above

72. VACCINES ADMINISTERED TO NEWBORN

1. ☐ Hepatitis B Date Given: _____
2. ☐ Other* Specify: _____
   Date Given: _____

73. APGAR SCORE

1 min	5 min	10 min

74. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.)

1. ☐ Anencephaly
2. ☐ Meningomyelocele/Spina bifida
3. ☐ Cyanotic congenital heart disease
4. ☐ Congenital diaphragmatic hernia
5. ☐ Omphalocele
6. ☐ Gastroschisis
7. ☐ Limb reduction defect (excluding congenital amputation and dwarfing syndromes)
8. ☐ Cleft Lip with or without Cleft Palate
9. ☐ Cleft Palate alone
10. ☐ Down Syndrome
    - ☐ Karyotype confirmed
    - ☐ Karyotype pending
11. ☐ Suspected chromosomal disorder
    - ☐ Karyotype confirmed
    - ☐ Karyotype pending
12. ☐ Hypospadias
13. ☐ Fetal alcohol syndrome
14. ☐ Other congenital anomalies *(Specify)* _____
15. ☐ None of the above

Parent's Telephone Number: _____

CHILD'S NAME _____ MOTHER'S NAME _____

Test required by K.S.A. 65-153f 153G Serological Test Made: _____ 1st _____ 2nd _____ 3rd (Trimester) _____ At Delivery _____ Not Performed If no test made, state reason:	Test required by K.S.A. 65-180 Infant Neonatal Screening specimen taken: _____ Yes _____ No Kit Number _____ If no test made, state reason:	Test required by K.S.A. 65-1157A Newborn Hearing Screening Accomplished: _____ Yes ____ No

Infant's patient number:

Infant's Primary Care Physician

First	Middle	Last	Title (MD, DO, etc.)

If screening accomplished, Date hearing screened _____/_____/_____ Month Day Year	The results of the hearing screening ✓: Right ear: _____ Pass _____ Refer for further testing Left ear: _____ Pass _____ Refer for further testing

Physiologic equipment used ✓: _____ OAE _____ AABR _____ ABR

If screening not accomplished, ✓ one reason:

_____ b – missed appointment	_____ o – other
_____ c – could not test	_____ r – did not consent
_____ d – deceased	_____ s – scheduled but not completed
_____ i – Incomplete test	_____ t – transferred to another hospital
_____ m – Infant discharged before screening	_____ u – no information
_____ n – transferred to NICU	_____ x – invalid results